

Research on the Development Status and Strategies of Children's Audio Education Apps in the Post-Pandemic Era: Postprint

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Abstract

In the post-pandemic era, children's audio education publishing applications, confronted with rapidly expanding market demands, have actively pursued explorations in market segmentation, scenario extension, and intelligent technology. Concurrently, issues such as unreasonable application design, content production that fails to conform to children's cognitive logic, and inadequate industry standardization have emerged. Sustained efforts in innovating product forms, strengthening original content creation capabilities, and enhancing brand collaborations are essential to advance the healthy development of the children's audio education publishing industry and foster a wholesome growth environment for children.

Full Text

A Study on the Development Status and Strategies of Children's Audio Education Apps in the Post-Pandemic Era

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Abstract

In the post-pandemic era, children's audio education publishing apps have actively explored market segmentation, scenario extension, and intelligent technologies to meet rapidly growing market demands. However, they also face issues such as unreasonable app design, content production that does not align with children's logic, and insufficient industry regulation. Only by continuing to innovate product forms, enhance original content creation capabilities, and strengthen brand cooperation can the children's audio education publishing

industry achieve healthy development and create a wholesome growth environment for children.

Keywords: publishing, post-pandemic era, children

In recent years, audio education publishing has developed rapidly, gradually transforming people's established reading habits and educational methods. Since 2018, a large number of children's audio education apps have flooded the mobile software market, with schools and families beginning to use these children's publishing products for supplementary education. According to the *National Reading Survey Report*, the listening rate among children aged 5–17 using audio education software exceeds 30% across all age groups. At present, the global COVID-19 pandemic remains unresolved, and we find ourselves in what is termed the “post-pandemic era”—a framework for thinking and analysis that presumes the pandemic as a temporary abnormal state will eventually end while anticipating certain future development trends [1]. Facing the abnormal circumstances of home isolation, work stoppages, and school closures, audio education has gradually become a dominant theme in people's lives, demonstrating its educational advantages in everything from disseminating epidemic prevention knowledge to providing supplementary compulsory education materials.

1. Current Development Status of Children's Audio Education Apps

Audio education publishing involves voice performers and professional recording production personnel converting written content into audio, which is then edited, scored, and post-produced into audio education books. These are delivered via mobile media to provide users with audio education reading services. The development of children's audio education publications is not a new phenomenon; as early as 2010, educational apps for children emerged, with apps like Xiaobanlong and Beiwa Erge focusing on companion-based early education for preschoolers. Currently, children are exposed to a media environment where everything is media, surrounded by various sounds, games, and videos. Under parental supervision, healthy audio education publications can guide children to discover the world, acquire knowledge, and engage in social interaction, combining reading with digital media to compensate for educational gaps during children's growth.

Since 2020, the pandemic has triggered greater demand for family-parent-child interaction through home isolation and school closures, making children's audio education apps exceptionally popular. These apps typically intersperse cute children's voices, colorful visuals, interesting games, and animations into educational content. From 2017 to the end of February 2021, the overall internet children's audio education industry showed a growth trend, with the overall trajectory from 2020 to 2021 somewhat synchronized with the pandemic situation. During peak pandemic periods, children's education apps were used more

frequently, while usage declined during periods of pandemic easing [1].

Figure 1 [Figure 1: see original paper] Trend of User Metrics for Children's Education Apps (Data Source: Yiguan Qianfan and Lanjing Education)

According to Yiguan Qianfan data, by the end of February 2021, there were 353 children's education apps, approximately 70% of which were children's audio education apps. These audio education apps can be further categorized into comprehensive, literacy, nursery rhymes, picture books, stories, and various courses. Among the top 10 children's education apps by active user scale in February 2021, nine were children's audio education apps—five were nursery rhyme apps and four were comprehensive apps—indicating that family education demand was greater during the pandemic. COVID-19 disrupted normal market demands for children's education. On top of already strong demand for children's literacy, the need to cultivate children's reading abilities, life skills, and safety and epidemic prevention knowledge—as substitutes for school functions—increased substantially. Relevant personnel should promptly shift their work direction to plan software and content suitable for market demands.

1.1 Classification of Children's Audio Education Apps

Currently, China's children's audio education publishing has formed app types and content divided by different age groups to help children of various ages learn. The first classification is by learning function. In recent years, numerous apps have flooded the children's audio education publishing market, gradually forming market segmentation through natural competition. Examples include “Hong En Literacy” focusing on children's character recognition, “KaDa Story” specializing in children's picture book reading, “Beiwa Erge” dedicated to nursery rhymes, and “Kai Shu Storytelling” cultivating children's reading interest. Each of these specialized apps occupies its own market position through unique content.

The second classification is age grading. Taking the comprehensive app “Baby Bus” as an example, a pop-up reminder to “set your child's age” appears during first use, with options ranging from 1 to 14 years old, allowing the app to intelligently recommend content based on the selected age. Graded reading, as a measure of age classification, refers to scientific reading plans tailored to children's different age characteristics, aiming to meet the reading and learning needs of different age groups. Children at different ages, especially during childhood, exhibit significant differences in cognition and behavior, and their reading abilities and interests vary. Audio and video content must align with children's thinking patterns to achieve proper intellectual enlightenment, emotional influence, and knowledge cultivation.

Against the backdrop of COVID-19, many children's apps have begun focusing on children's epidemic prevention safety, recording relevant safety videos and establishing dedicated epidemic prevention safety science columns to help parents guide children in developing awareness.

1.2 Usage Scenarios of Children’s Audio Education Apps

Due to the portability of audio education publishing technology, audio education publishing is inseparable from scenarios. Particularly in the post-pandemic era, audio education publications possess convenience unmatched by other media. Children’s audio education publishing apps can differentiate various reading scenarios and launch content suitable for specific scenarios, making audio education publications more compatible with children. “Kai Shu Storytelling” originally developed from Kai Shu telling bedtime stories, and since then, audio education publishing apps have begun launching scenario-based reading adapted to children’s lives. For instance, the “Baby Bus” app features dedicated scenario categories including “eating,” “bedtime soothing,” “wake-up calls,” and “kindergarten.” This scenario-based reading can help children effectively utilize fragmented time, experience the special feelings brought by audio, and assist parents in subtly cultivating children’s reading interest and life skills.

For example, when children wash their hands, parents can play nursery rhymes about proper handwashing to prevent germs, further reinforcing impressions of good habits. Using voices of peer-aged children creates the sense of a little playmate, making children more receptive to external knowledge. Under pandemic disruption, children have access to far fewer scenarios than in normal life, with more home isolation situations. Audio education publications can create various scenarios through immersive sounds and visuals, compensating for kindergarten educational gaps while allowing children to roam in an audio-created paradise.

1.3 Application of Artificial Intelligence in Children’s Audio Education Apps

With the widespread application of internet and intelligent AI technologies, children’s reading needs are also changing. Entering the interactive information age, readers’ demand for interactive emotions has increased. Audio education publications should integrate with interactive technology, innovate content presentation forms, provide children with clear, concise, and understandable interactive experiences, reduce children’s alienation from textual information, and allow children to experience interpersonal communication through interactive experiences.

In 2018, companies such as Alibaba, Baidu, Xiaomi, Amazon, and Himalaya turned their attention to smart speakers, launching customized versions for children. For example, Xiaomi’s “Mi Rabbit Smart Story Machine” is shaped like a cute little rabbit and employs a children’s intelligent voice engine system to provide children with human-computer interactive experiences. With intelligent AI system support, the Mi Rabbit Smart Story Machine features eight functions: “storytelling,” “smart chatting,” “intelligent voice on-demand,” “human-computer interaction,” “remote management,” “WeChat voice intercom,” and “audio.” Children can listen to audio education readings with parental assistance and also converse with the story machine, which intelligently generates

dialogues based on different children's behaviors and thinking habits. The system also includes small quizzes in mathematics and English, allowing children to engage in learning activities during leisure time.

Such interactive smart devices can not only integrate cutting-edge technology with excellent content but also satisfy children's personalized and diversified reading needs while expanding the industrial space for children's audio education reading and bringing new directions for the future development of children's audio education publishing.

2. Existing Challenges in Children's Audio Education Publishing

2.1 Design Defects in Children's Audio Education Publishing Apps

Audio education publishing in China is still in its growth phase, and various children's audio education publishing apps have certain design defects. Taking leading children's audio education publishing apps as examples, investigating various software reviews reveals the following design defects in Himalaya Children's Edition: random novel recommendations within the software; playback interface lacking speed adjustment, subtitles, and repeat functions; and although the software is simple to operate as a children's product, its usage logic remains adult-oriented, inevitably causing various problems for children during use. Similarly, the "Xiaobanlong" app has issues including: unsaved learning progress, repetitive level, content, and style settings, unreasonable fees, storylines that do not conform to children's logic, and in-game lag and unsmooth performance.

Based on user feedback for these two apps, most products suffer from shortcomings in software design, content design, usage design, and unreasonable fees. Children's education requires particular attention to appropriate wording and healthy values. Childhood is a critical period for establishing correct values, and relevant teaching materials and products must conform to children's logic and eliminate inappropriate content. Two factors cause these defects: on one hand, developers lack relevant experience and need continuous trial and error to find the most suitable operational design; on the other hand, some developers are too eager for quick success, focusing only on short-term interests, resulting in severe homogenization of children's audio education publishing apps where most content is similar and original content creation capabilities are insufficient.

2.2 Insufficient Industry Regulation for Audio Education Publishing

Audio education publishing has complex copyright ownership, and industry supervision needs strengthening. The special production and dissemination process of audio education publishing makes copyright ownership and protection more difficult than physical books. Currently, the market contains numerous copyright law violations, including unauthorized adaptation of non-licensed original works into audio education products and rampant pirated audio. Copyright

holders of original works and audio expend significant time and effort on product production, yet the path to copyright protection is difficult, further creating a vicious cycle of “bad money driving out good.” Relying solely on corporate self-discipline and industry self-regulation cannot effectively govern industry chaos.

In the audio education publishing field, the two most applied laws are the *Copyright Law Implementation Regulations* and the *Audio-Video Products Management Regulations*, both issued relatively early and unable to effectively regulate the rapidly expanding audio education publishing industry. The industry urgently needs new regulations aligned with future development directions. This is especially true for children’s audio education publishing. On January 1, 2022, China formally implemented the *Law of the People’s Republic of China on Family Education Promotion*, which legally obligates parents to ensure the comprehensive and healthy growth of minors. As the state attaches greater importance to children’s family education, the children’s audio education publishing industry should seize this opportunity to innovate and create specialized products beneficial to children on the premise of legality and compliance. Only by creating a healthy development environment can the audio education publishing industry achieve positive development.

2.3 Insufficient Publisher Participation in Audio Education Publishing Processes

The audio education publishing industry chain divides into upstream, midstream, and downstream. The upstream comprises copyright holders and audio producers, the midstream comprises platform operators, and the downstream comprises distributors. Currently, although some children’s publishers own numerous original copyrights and excellent children’s book authors, most only participate upstream by providing copyrights and original works, rarely involving themselves in midstream content production or downstream operation and promotion. Currently, major children’s audio education publishing apps are third-party software such as “Baby Bus” and “Himalaya Children’s Edition,” with few children’s publishers participating in self-produced children’s audio education apps, and even fewer achieving large-scale effects.

Furthermore, children’s audio education products launched by children’s publishers mostly rely on platform cooperation, with products exclusively broadcast on cooperative apps or broadcast across all platforms. For example, Qingdao Publishing House launched *Party History for Youth (Audio Education Book)*, where the publisher produced the audio education publication and the platform handled promotion and broadcasting. Important reasons for this situation include publishers’ insufficient technology and financial support, lack of specialized talent for planning, and essentially zero relevant experience, leaving publishers unable to devote adequate attention to audio education publishing. Consequently, currently available audio education publishing products from publishers have single product types and single revenue-sharing paths, failing to fully

leverage publishers' content and copyright advantages.

3. New Considerations for Elements in Children's Audio Education Publishing Apps

3.1 Innovating Product Forms and Increasing Interactive Design

Children's audio education publishing products increasingly feature diverse forms, including ordinary narrated audio books or picture books, as well as various forms such as celebrity narration and professional production team recording. Popular examples include "Kai Shu Storytelling" and works adapted into radio dramas like *Mi Xiaoquan School Diary*, which leverage celebrity or popular IP effects to inject vitality into audio education products. Children's audio education products should pay greater attention to form innovation, rich content, and colorful backgrounds.

Audio synthesized purely by AI and other intelligent machines is too mechanical, vastly different from real human voices, and may negatively impact children's development in the long run. Radio drama is an excellent presentation form, featuring professional voice actors, immersive background sounds, and sound effects that make stories more listenable, allowing text to be displayed three-dimensionally in children's minds and enhancing their spatial sense and imagination. Interactive audio books represent another new form, using audio books as the main body while interspersing choices in the plot, allowing children to select different options to change story direction. This design can stimulate children's reading interest, help them immerse themselves in and understand plots more quickly, and cultivate flexible thinking.

3.2 Enhancing Original Content Creation and Mining Excellent Scripts

Addressing the current severe homogenization and frequent copycat phenomena in the children's audio education publishing industry, industry entities should deeply explore and cultivate a group of excellent original children's book authors, thoroughly grasp children's psychology, and create works that conform to different age groups' reading habits and thinking patterns. Simultaneously, based on thorough market demand research, they should publish different types of audio education products to enhance publishers' effective supply capabilities.

Currently, major audio education publishing apps actively seek cooperation with publishers, strive to discover a new generation of excellent original authors, and invite numerous bestselling children's book authors to create original scripts for them, while also launching children's literature essay and reading competitions. Additionally, platforms actively mobilize broad readership by launching a series of participatory activities. For example, Himalaya Children's Edition holds an annual "Storytelling Competition" with participants aged 6–9. These activities give children opportunities to showcase themselves and express their true selves

while bringing heat to the platform and harvesting original stories, thereby further enriching the platform's own content resources and innovative activities.

3.3 Strengthening Brand Cooperation and Extending Scenario-Based Reading

In addition to creating excellent content to serve children and parents, platforms should actively seek cooperation across different industries to expand their visibility and influence. For example, cooperating with kindergartens to provide more convenience for institutional education, and combining with after-school children's interest courses to extend usage scenarios. For children's fragmented time during commutes, some car companies cooperate with audio education publishing apps, allowing children to listen to stories anytime and anywhere when going out.

"Pocket Stories" once cooperated with the iJiazu car companion, an in-vehicle intelligent hardware device, allowing parents to directly control the app through buttons on the steering wheel to switch stories at any time, satisfying children's companionship needs during commutes. Such cooperation can enhance the convenience of audio education apps, help children and families better adapt to "ear life," and help driving parents soothe children, establishing harmonious and healthy family relationships.

A high-quality children's audio education publishing app can not only transmit necessary knowledge to children but also serve as a tool for them to understand and experience the world. Especially in the post-pandemic era, online education has placed considerable strain on children's eye health. To relax their eyes, audio education books transmitted solely through sound will be more favored by parents. Moreover, children's audio education publishing apps are becoming increasingly professional, more effectively helping parents implement education for their children. Children's education is of paramount importance, and children's audio education publishing is still in its ascendancy. Relevant industries should focus on how to better serve children, innovate communication forms, and create more appealing and affinity-filled sound environments for children, contributing to their healthy growth.

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